

REMARKS

Reconsideration of this application is respectfully requested in light of the above amendments and following remarks. Claims 1 - 9 remain in the application; claim 1 has been amended to include the elements of claim 8 and claim 8 has been cancelled. Claims 10 - 25 were previously cancelled.

I. The affidavit under 37 CFR 1.132 filed 5/5/05 was considered insufficient to overcome the rejection of claim 1 based upon 35 USC 103 (a) rejection as being obvious over Zhang (US 2004/0227228) as set forth in the last Office action because it failed to set forth facts.

Claims 1,7-9 were rejected under 35 U.S.C. 103(a) as being unpatentable over Cummings (US 4,336,320) in view of applicant's admitted prior art (AAPA). The office action stated that Cummings is silent on the exact composition of the dielectric and does not explicitly disclose that the dielectric thick film is tunable. However, the Office Action stated that the reference does teach that the method is used to manufacture high density interconnection circuitry for multilayered hybrid micropackages. The OA stated that the Applicant teaches that tunable dielectric materials including barium strontium titanate are known and described in the prior art (p.8, 1.14-p.9, 1.6) and that it would have been obvious to one of ordinary skill in the art to use a tunable dielectric in the method of making a thick film - hybrid micropackage in the method of Cummings because the applicant teaches that tunable dielectric materials are known and described in the prior art.

Claims 1,7-9 were rejected under 35 U.S.C. 103(a) as being unpatentable over Cummings (US 4,336,320) in view of Sengupta (US 5,766,697). Again, it was stated that Cummings was silent on the exact composition of the dielectric and does not explicitly disclose that the dielectric thick film is tunable. However, it was proffered that the Sengupta reference does teach that the method is used to manufacture high density interconnection circuitry for multilayered hybrid micropackages and that Sengupta teaches a dielectric composition of barium strontium titanate which has improved electronic properties such as dielectric constants, tunability and low loss (col.2, 1-col.3, 67). Thus, the OA stated it would have been obvious to one of ordinary skill in the art to use a tunable dielectric in the method of making a thick film hybrid micropackage in the method of Cummings because Sengupta tunable dielectric such as barium strontium titanate has improved electronic properties.

Claim 1 was rejected under 35 U.S.C. 1 03(a) as being obvious over Zhang (US 2004/0227228).

Claims 2-4 were rejected under 35 U.S.C. 103(a) as being unpatentable over Cummings in view of AAPR or Sengupta or Zhang as applied to claim 1 above, and further in view of Geist (US 4,772,377).

Claims 2-5 were rejected under 35 U.S.C. 103(a) as being unpatentable over Cummings in view of AAPR or Sengupta or Zhang as applied to claim 1 above, and further in view of Maruta (US 5,686,525).

Claim 6 was rejected under 35 U.S.C. 103(a) as being unpatentable over Cummings in view of AAPR or Sengupta or Zhang as applied to claim 1 above, and further in view of Mueller (US 6,097,263).

Applicant has amended claim 1 to include the elements of claim 8 as follows:

1. (Currently Amended) A method of fabricating a tunable dielectric slurry, comprising:

- depositing a thick film tunable dielectric onto a substrate;
- subjecting said thick film to Ultra Violet (UV) radiation exposure after it is coated onto said substrate;
- drying and baking said thick film and said substrate;
- applying a developer to said thick film and said substrate, said developer capable of washing away an unexposed area of said thick film and retaining an exposed area enabling a latent pattern to be brought out and thus creating a patterned film; ~~and~~
- sintering said substrate; and

wherein components in said fabricating a tunable dielectric slurry, are selected from the group consisting of:

- ceramic powder;
- photosensitive polymer;
- photoinitiator;
- solvents;
- photo inhibitor; and
- adhesion promoter.

Although the office action did not speak specifically to the components of said tunable dielectric slurry being selected from the group consisting of the aforementioned, Applicant submits that this group enables the method of fabricating a tunable dielectric slurry as claimed in claim 1.

Applicant respectfully suggests that merely because the material is known and a process is known, it is not necessarily obvious to use the process with said material – as the tunable dielectric material of the present invention is not readily conducive to use with the process of Cummings. As an initial position, Applicant submits that would not be obvious to combine Cummings and Sengupta or Zhang as “depositing a thick film tunable dielectric onto a substrate” was previously considered problematic as tunable dielectric material was not as readily conducive to depositing as is the non-tunable material of Cummings. The inventors of the present invention were aware of problems with the method of the present invention as they have been working with tunable dielectric material and methods of fabricating them for over ten years – it is noted that the inventors, Sengupta and Zhang, of the cited art are both employees of the assignee of the present invention and are in an excellent position to be able to determine the difficulties of replacing the tunable dielectric of the present invention with the non-tunable dielectric of Cummings and thus the non-obvious nature of combining Cummings and Zhang or Sengupta.

Indeed, it took Applicant several years of dedication and trial and error to enable the method of fabrication of the present invention. Notwithstanding the above, Applicant has amended claim 1 to include the elements of claim 8, which include:

wherein components in said fabricating a tunable dielectric slurry, are selected from the group consisting of:

ceramic powder;

photosensitive polymer;

photoinitiator;

solvents;

photo inhibitor; and

adhesion promoter.

It was through the great amount of trial and error suggested above that the components in said fabricating a tunable dielectric slurry be selected from the group consisting of: ceramic powder; photosensitive polymer; photoinitiator; solvents; photo inhibitor; and adhesion promoter. Dielectric material that is made tunable by utilizing the correct material is far more difficult to accomplish the present method than the method suggested by Cummings. Thus, Applicant respectfully submits that all of the above 103 rejections combining Cummings and Sengupta or Zhang have been traversed and that claim 1 and the claims that depend therefrom are in condition

PATENT

Serial No. 10/822,326

Docket No. JSF01-0041/WJT08-0068

for allowance.

PATENT
Serial No. 10/822,326
Docket No. JSF01-0041/WJT08-0068

CONCLUSION

It is respectfully submitted that, in view of the foregoing amendment and remarks, the application is in clear condition for allowance. The Office is hereby authorized to charge any additional fees or credit any overpayments under 37 C.F.R. 1.16 or 1.17 to Deposit Account No. 502697. The Examiner is invited to contact the undersigned at 202-607-4607 to discuss any matter regarding this application.

Respectfully submitted,



James S. Finn
Registration No. 38,450

Date: 12-1-05

14431 Goliad Dr., Box #8
Malakoff, TX 75148
(202) 607-4607 (phone)
202-318-2450 (eFax)